APM: Do not edit any part of the Work Item Title.

WORK ITEM 1: Propulsion Shaft Strut, Renew

1. SCOPE

1.1 Intent. This work item describes the requirements for the Contractor to renew the propulsion shaft strut(s).

APM: Designate which Propulsion Shaft Strut(s) to renew. Adjust GFP table.

1.2 Government-furnished property.

APM: Validate all GFP data. If the Spec Package's Consolidated List of GFP is changed, ensure it is changed in the source WI and GFP style is applied.

MTI	ITEM DESCRIPTION	NSN/PN	QTY	ESTIMATED COST ($/UNIT)
Y	**Port Strut	NSN: 2040-01-460-8293	1 ea.	
Y	**Port Strut Short	NSN: 2040-01-546-4706	1 ea.	
Y	**Starboard Strut	NSN: 2040-01-460-8305	1 ea	
Y	**Starboard Strut Short	NSN: 2040-01-546-4708	1 ea	

***Government-loaned property, which shall be returned to the vessel upon completion of the availability.**
****New or refurbished equipment that the Government may provide for installation in place of existing equipment.**
*****Government-furnished property, which is to be supplied by either the vessel or the C4IT Service Center.**

2. REFERENCES

APM: If adding/deleting/editing a WI's Reference, change the same ref. in the Spec Pkg.'s Cons. List of Refs. and send feedback to the WI's developer.

COAST GUARD DRAWINGS

Coast Guard Drawing 47B-MLB 161-010, Rev M, Shaft Struts and Barrels

COAST GUARD PUBLICATIONS

Surface Forces Logistics Center Standard Specification 0000 (SFLC Std Spec 0000), 2014, General Requirements

Surface Forces Logistics Center Standard Specification 0740 (SFLC Std Spec 0740), 2014, Welding and Allied Processes

Surface Forces Logistics Center Standard Specification 6310 (SFLC Std Spec 6310), 2014, Requirements for Preservation of Ship Structures

OTHER REFERENCES

MIL-PRF-24176, 2004, Cement, Epoxy, Metal Repair and Hull Smoothing (Metric)

MIL-R-23461, 1987, Resin Compound, Thermosetting, Room Temperature Curing, For Metal Coating

American Society for Testing and Materials (ASTM) D3951, Reapproved 2004, Standard Practice for Commercial Packaging

3. REQUIREMENTS

3.1 General.

3.1.1 CIR.

None.

3.1.2 Tech Rep.

Not applicable.

3.1.3 Protective measures - general. The Contractor shall furnish and install all protective coverings to seal off and protect all non-affected vessel's components, equipment, and spaces in the vicinity of the work area against contamination during the performance of work. Upon completion of work, the Contractor shall remove all installed protective measures, inspect for the presence of contamination, and return all contaminated equipment, components, and spaces to original condition of cleanliness.

3.1.4 Interferences. The Contractor shall handle all interferences in accordance with SFLC Std Spec 0000, paragraph 3.3.5 (Interferences). Known interferences include, but are not limited to the below-listed:

- Propulsion shaft(s)
- Propeller(s)

3.1.5 Operational test - initial. Prior to commencement of work, the Contractor shall witness Coast Guard personnel perform an initial operational test of all items or shipboard devices to be disturbed, used, repaired, or altered, to demonstrate existing operational condition. Submit a CFR.

3.2 Renewal. The Contractor shall renew the designated strut(s) in accordance with Coast Guard Drawing 47B-MLB 161-010.

3.2.1 Strut removal. The Contractor shall unbolt and remove the existing strut(s). Remove and dispose of all existing fairing compound from adjacent areas in accordance with all applicable Federal, State, and local laws and regulations.

3.2.2 Mandatory turn-in items. The Contractor shall package and temporarily store the strut(s) in accordance with ASTM D3951 and SFLC Std Spec 0000, paragraph 3.2.10 (Mandatory turn-in items).

NOTE
Struts are Stainless Steel and Hull Plating is 5456 Aluminum.

3.3 Strut alignment and installation. The Contractor shall ensure that the new Government-furnished strut is in proper alignment to the shaft centerline by accomplishing the following:

3.3.1 Pre-installation alignment. Align strut with the stern tube using the optical method or taut-wire method.

NOTE

During alignment, if the gap between the strut palm and the hull needed to achieve alignment exceeds 1-1/2", submit a CFR as detailed in paragraph 3.3.2 prior to installing the strut.

3.3.2 Alignment report. Submit a CFR detailing the following pertaining to the alignment procedure:

- The location of the strut in relation to centerline (port or starboard).
- The depth of the gap between the strut palm and the hull necessary to achieve proper alignment to the stern tube.

3.4 Installation using strut palm spacer plate. If a Change Request has been authorized and released, the Contractor shall fabricate and install a spacer plate between the strut palm surface and the hull. Ensure the following:

3.4.1 The spacer plate shall be fabricated to match the dimensions and profile of the strut palm, and shall be made of 5083 Aluminum with holes drilled to align to the existing holes in the strut palm.

3.4.2 The spacer plate shall be attached to the hull. The remaining gap between the spacer plate and the hull shall be built up using one of the following systems based on remaining depth to fill:

- Condition 1 – If the remaining gap necessary to be filled exceeds ¼-inch, use a suitable metal repair compound conforming to MIL-PRF-24176, and apply in accordance with manufacturer's instructions.
- Condition 2 – If the remaining gap necessary to be filled is less than ¼-inch use a compound conforming to MIL-R-23461, in accordance with manufacturer's instructions.

3.4.3 Install the strut using new mounting hardware, and fill the hull to strut palm gap, as specified in paragraph 3.4.2 above for Condition 1 or Condition 2, as applicable.

NOTE

This installation method should only be used if the gap measured during alignment between the strut palm and the hull exceeds 1-inch.

3.5 Installation without a spacer plate. If a Change Request has been authorized and released, the Contractor shall install the strut as follows:

3.5.1 Build up any remaining gap between strut and the hull in order to allow for proper alignment between the strut and the stern tube using , as specified in paragraph 3.4.2 above for Condition 1 or Condition 2, as applicable.

3.5.2 Install the strut using new mounting hardware, and fill the hull to strut palm gap, as specified in paragraph 3.4.2 above for Condition 1 or Condition 2, as applicable.

3.6 Hole boring. If required, the Contractor shall drill and tap the new strut bearing set screw holes on the strut hub as shown on Coast Guard Drawing 47B-MLB 161-010.

3.7 Surface preservation. The Contractor shall prepare and coat the affected surfaces, using the system specified for "Underwater (U/W) Body and Boot-Top, Aluminum Hull" in SFLC Std Spec 6310, Appendix A (Cutter and Boat Exterior Painting Systems). Select finish/top coat color as specified in (Top Color Coat for Exterior Miscellaneous Details and Fittings).

NOTE
Coast Guard personnel will operate all vessel machinery and equipment.

3.9 Operational test – post repairs. After completion of work, the Contractor shall thoroughly test, in the presence of the Coast Guard Inspector and demonstrate all items or shipboard devices that have been disturbed, used, repaired, altered, or installed to be in satisfactory operating condition. Submit a CFR.

4. NOTES

4.1 Equipment operation. Coast Guard personnel will operate all vessel machinery and equipment during all operational tests.

4.2 Coast Guard Inspector's responsibility. The COTR will witness all alignment measurements.